Alberta

Traffic Collision Statistics

2003

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2003 Overview

- The number of **traffic fatalities increased 3.5%** over the past year from 372 fatalities in 2002 to 385 in 2003.
- The number of **traffic injuries decreased 8.8%** over the past year from 28989 injuries in 2002 to 26426 in 2003.
- The number of **traffic collisions decreased 2.5%** over the past year from 116308 collisions in 2002 to 113357 in 2003.
- **The highest number of casualty collisions** occurred in **January**.
- **Friday** was the most collision-prone day of the week.
- **The most collision-prone period of time was the afternoon rush-hour**.
- **Casualty rates** were highest for persons between the **ages of 15 and 24**.
- **Male drivers** between the **ages of 16 and 19** had the highest involvement rate of all drivers involved in casualty collisions.
- Following too closely, running off the road and left turn across path were the most frequently identified improper driver actions contributing to casualty collisions.
- **Fatal collisions** occurred most frequently in **rural areas**, whereas **injury and property damage collisions** occurred more frequently in **urban areas**.
- **44.8% of pedestrians** involved in **fatal collisions had consumed alcohol prior to the collision** compared to **14.8% of pedestrians in injury collisions**.
- **22.3%** of drivers involved in fatal collisions **had consumed alcohol** prior to the crash compared to **4.6%** of drivers in injury collisions.
- Collision involved restraint users had a much lower injury rate (12.7%) than those not using restraints (39.5%)

Preface

The purpose of this report is to provide an overview of the "who", "what", "when", "where", "why", and "how" of traffic collisions which occurred in Alberta during 2003. Although the report is general in nature, it pays particular attention to casualty collisions, that is, those collisions which result in death or injury. Legislation in Alberta requires that a traffic collision which results in either death, injury or property damage to an apparent extent of $1000.00 or more, be reported immediately to an authorized peace officer. The officer completes a standardized collision report form which provides information on various aspects of the traffic collision. This report is based on the data collected from these report forms.

The collision report form is issued with standard instructions to every police service within Alberta, to be completed by the officer attending the scene of a motor vehicle collision or at a police station. Police priorities at the scene of a collision are to care for the injured, protect the motoring public and clear the roadway. Completion of the collision report form is a secondary, but necessary task.

After completion, the information on the collision report form is coded for input to computer files. The Alberta Collision Information System, which has been operational since 1978, undergoes several manual and computerized inspections each year in order to ensure maximum accuracy of the final data output. This collision information is used to make Alberta's roads safer for all road users. Due to continuing police investigation, some numbers presented in this report may be subject to revision. It should also be noted that not all percentage columns will total 100 due to rounding error.

This report was produced based on collisions reported to Alberta Transportation by police, at the time of printing. The numbers presented in this report will not be updated. However, the patterns and trends detailed in this report represent an accurate description of Alberta's traffic collision picture.

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Glossary

Alcohol Impaired – In the judgement of the police officer, driving ability was impaired by alcohol consumption. Whether or not the subject was actually charged is not taken into consideration by the collision report form.

Casualty Collision – A vehicle collision which results in either a fatal or personal injury.

Drinking Driver – Refers to those drivers judged by the police officer as having been drinking prior to the collision or as being alcohol impaired at the time of the collision. Whether or not the driver was actually charged is not taken into consideration by the collision report form.

Fatality – A fatality is the death of a person that occurs as a result of a motor vehicle collision within 30 days of the collision.

Had Been Drinking – In the judgement of the police officer, the driver had recently consumed alcohol but his driving ability was not obviously impaired.

Major Injury – Persons with injuries or complaint of pain that went to the hospital and were subsequently admitted even if for observation only.

Minor Injury – Persons with injuries or complaint of pain that went to the hospital, were treated in emergency (or refused treatment) and SENT HOME without ever being admitted to the hospital. (Also includes people who indicated that they intended to seek medical treatment).

Motorcyclist – Refers to drivers and passengers of motorcycles.

Occupant Casualties – Refers to people who were injured or killed as a result of a vehicle collision and were identified as being either a vehicle driver or passenger.

Property Damage – A vehicle collision which resulted in property damage exceeding $1000.00.

Reportable Collision – A vehicle collision which resulted in death, injury or property damage greater than $1000.00.

Rural – Any area outside of what is defined as "**Urban**".

Urban – Any area within the corporate boundaries of a city, town, village or hamlet.

2003 Traffic Collision Summary

Introduction

During 2003, 113357 collisions were recorded on Alberta roadways. Property damage collisions (over $1000) represented 83.4% (94589) of this total while 16.3% (18447) were non-fatal injury collisions. Fatal collisions accounted for 0.3% (321) of the total reported collisions.

Five Year Trends

In terms of population, licensed drivers and registered vehicles the fatal collision and fatality rates are unchanged from 2002.

The non-fatal injury rate, has decreased in 2003 in terms of population, licensed drivers and registered vehicles.

Property damage collision rates also decreased in 2003 in terms of population, licensed drivers and registered vehicles.

Provincial Comparisons

In order to get a picture of Alberta's traffic casualties in comparison to other provinces, rates rather than absolute numbers are utilized. In this instance casualty rates per billion vehicle kilometres travelled were examined.

Figures for 2003 provincial comparisons were not available at the time of printing; therefore, figures for 2002 were used. Based on this comparison of rates per billion vehicle kilometres travelled, of the 12 provinces and territories for which information was available, six had a higher fatality rate than Alberta in 2002. With regard to injury rate, in 2002, two jurisdictions had a higher injury rate than Alberta.

Table 1.1

Alberta Traffic Collisions

1999 – 2003

Severity of Collisions	**2003**	**2002**	**2001**	**2000**	**1999**
Fatal Collisions	321	322	341	312	305
Non-Fatal Injury Collisions	18447	20152	19000	18246	17398
Property Damage Collisions	94589	95834	88050	85905	77543
Total Reportable Collisions	**113357**	**116308**	**107391**	**104463**	**95246**
Number Killed	385	372	404	364	347
Number Injured	26426	28989	27583	26464	25451
Total Number of Casualties	**26811**	**29361**	**27987**	**26828**	**25798**

Observations

In 2003, the overall number of collisions decreased 2.5% when compared to 2002. In 2003, injury collisions decreased 8.5% and fatal crashes decreased by 0.3%. The number of fatalities increased by 3.5% from 2002 to 2003, and the number of injuries decreased by 8.8%. In terms of the past five years, overall collisions were lowest in 1999 and highest in 2002.

Table 1.2

Traffic Collision Rates

1999 – 2003

Severity of Collision	Rate Per 10,000 Population*					Rate Per 10,000 Licensed Drivers*					Rate Per 10,000 Registered Vehicles*				
	2003	**2002**	**2001****	**2000**	**1999**	**2003**	**2002**	**2001**	**2000**	**1999**	**2003**	**2002**	**2001**	**2000**	**1999**
Fatal Collisions	1.0	1.0	1.1	1.0	1.0	1.4	1.4	1.5	1.4	1.4	1.3	1.3	1.5	1.4	1.4
Number Killed	1.2	1.2	1.3	1.2	1.2	1.6	1.6	1.8	1.6	1.6	1.6	1.6	1.7	1.6	1.6
Non-Fatal Injury Collisions	58.5	64.7	62.0	60.9	58.7	78.0	86.3	83.2	82.0	80.0	76.4	84.4	81.5	81.0	79.6
Number Injured	83.8	93.1	90.0	88.3	85.8	111.8	124.2	120.7	118.9	117.0	109.5	121.5	118.3	117.5	116.4
Property Damage Collisions	299.9	307.8	287.4	286.6	261.6	400.2	410.5	385.4	386.1	356.5	391.8	401.6	377.6	381.3	354.6
Total Reportable Collisions	**359.4**	**373.5**	**350.5**	**348.5**	**321.3**	**479.6**	**498.1**	**470.0**	**469.5**	**437.9**	**469.5**	**487.4**	**460.5**	**463.7**	**435.6**

Observations

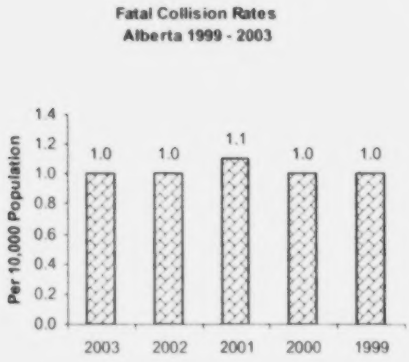
In terms of population, licensed drivers and registered vehicles the fatal collision and fatality rates are unchanged from 2002.

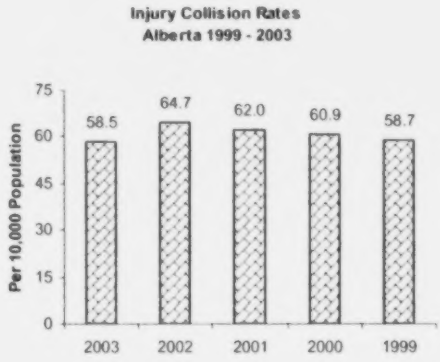
The non-fatal injury rate, has decreased in 2003 in terms of population, licensed drivers and registered vehicles.

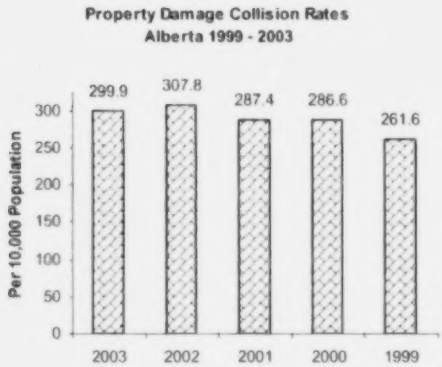
Property damage collision rates also decreased in 2003 in terms of population, licensed drivers and registered vehicles.

*Sources:
Population – Statistics Canada as of July 1, 2003
Licensed Drivers – Government Services – Registries, as of December 31, 2003
Registered Vehicles – Government Services – Registries, as of December 31, 2003
**Updated 2003, Source: Statistics Canada as of July 1, 2001

Figure 1


Fatal Collision Rates
Alberta 1999 - 2003
Per 10,000 Population
1.4
1.2
1.0
0.8
0.6
0.4
0.2
0.0
1.0
1.0
1.1
1.0
1.0
2003
2002
2001
2000
1999


Injury Collision Rates
Alberta 1999 - 2003
Per 10,000 Population
75
60
45
30
15
0
58.5
64.7
62.0
60.9
58.7
2003
2002
2001
2000
1999


Property Damage Collision Rates
Alberta 1999 - 2003
Per 10,000 Population
300
250
200
150
100
50
0
299.9
307.8
287.4
286.6
261.6
2003
2002
2001
2000
1999

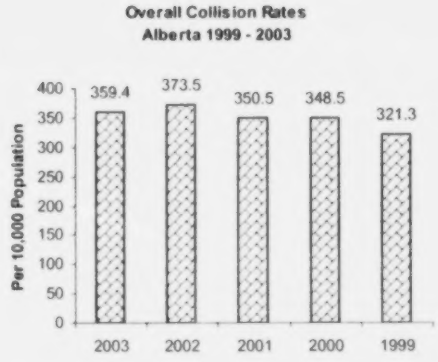

Overall Collision Rates
Alberta 1999 - 2003
Per 10,000 Population
400
350
300
250
200
150
100
50
0
359.4
373.5
350.5
348.5
321.3
2003
2002
2001
2000
1999

Table 1.3

Provincial Comparison of Casualty Rates
Per Billion Vehicle Kilometres Travelled*

2000-2002

	2002		2001		2000	
	Fatalities	**Injuries**	**Fatalities**	**Injuries**	**Fatalities**	**Injuries**
Canada	9.3	721.2	9.0	713.0	9.4	732.3
Alberta	10.1	783.6	10.0	682.4	8.6	628.5
British Columbia	12.4	776.6	11.7	838.5	12.0	849.6
Saskatchewan	12.3	652.7	13.0	547.5	12.7	656.8
Manitoba	10.8	948.9	8.3	799.3	10.5	894.8
Ontario	7.1	679.4	7.3	705.4	7.2	721.4
Quebec	9.9	749.1	8.8	707.5	11.2	755.3
New Brunswick	12.2	592.3	11.7	686.5	10.5	647.0
Nova Scotia	8.5	574.0	8.2	647.6	9.4	756.4
Prince Edward Island	14.3	789.8	12.2	896.0	15.8	939.1
Newfoundland	10.0	701.2	9.3	690.2	10.6	613.7
Yukon	25.3	572.6	10.9	836.7	21.7	745.9
Northwest Territories	8.4	643.2	7.5	512.8	16.6	738.5
Nunavut	N/A	N/A	47.6	N/A	70.4	N/A

Observations

In order to get a picture of Alberta's traffic casualties in comparison to other provinces, rates rather than absolute numbers are utilized. In this instance casualty rates per billion vehicle kilometres travelled were examined.

Based on this comparison of rates per billion vehicle kilometres travelled, of the 12 provinces and territories for which information was available, six had a higher fatality rate than Alberta in 2002. With regard to injury rate, in 2002, two jurisdictions had a higher injury rate than Alberta.

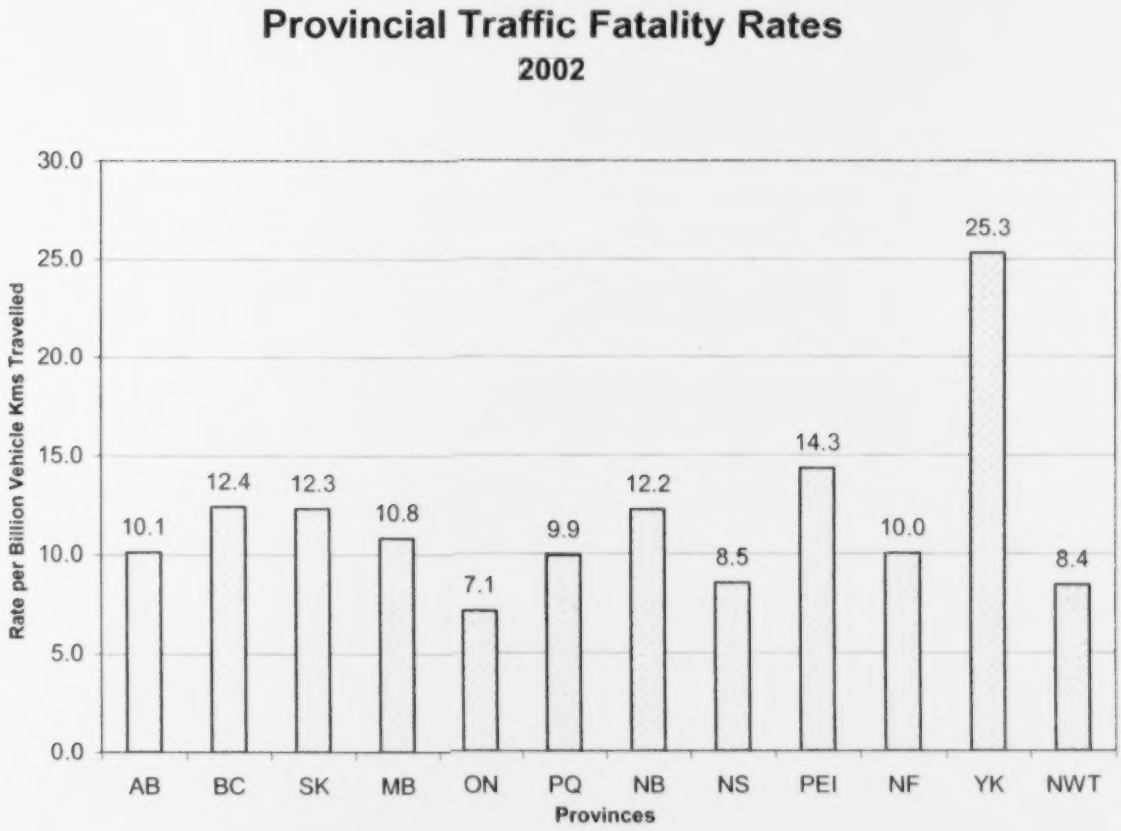
*Figures for 2003 were not available at time of printing.

Sources: Transport Canada Canadian Motor Vehicle Traffic Collision Statistics TP3322 and Statistics Canada, "Canadian Vehicle Survey", catalogue No. 53-223-XIE.

The Canadian Vehicle Survey (CVS) is a voluntary vehicle-based survey that provides annual estimates of road vehicle activity (Vehicle-kilometres and passenger-kilometres) of vehicles registered in Canada.

The in-scope vehicles for the CVS include all motor vehicles except motorcycles, off-road vehicles (e.g., snowmobiles, dune buggies, amphibious vehicles) and special equipment (e.g. cranes, street cleaners, snowplows and backhoes) registered in Canada anytime during the survey reference period that have not been scrapped or salvaged.

Figure 2


Provincial Traffic Fatality Rates
2002
Rate per Billion Vehicle Kms Travelled
30.0
25.0
20.0
15.0
10.0
5.0
0.0
10.1
12.4
12.3
10.8
7.1
9.9
12.2
8.5
14.3
10.0
25.3
8.4
AB
BC
SK
MB
ON
PQ
NB
NS
PEI
NF
YK
NWT
Provinces

When the Collisions Occurred

Month

The month of January experienced more casualty collisions than other months. The highest number of property damage collisions was recorded during the month of November.

Day of Week

The daily distribution of collisions indicated that Friday was the most collision-prone day of the week.

Time

The afternoon rush hour period (3:00 p.m. – 6:59 p.m.) accounted for the highest proportion of collisions. The least collision-prone time period was the early morning (3:00 a.m. – 6:59 a.m.).

Holidays

The Victoria Day Long Weekend and the August Long Weekend recorded the highest number of individuals killed. The Labour Day Long Weekend recorded the highest number of injuries. The Family Day Long Weekend recorded the highest total number of collisions.

Table 2.1

Collision Occurrence by Month

2003

Month	Fatal Collisions		Non-Fatal Injury Collisions		Property Damage Collisions		Total Collisions	
	N	%	N	%	N	%	N	%
January	21	6.5	1879	10.2	10239	10.8	12139	10.7
February	19	5.9	1537	8.3	8439	8.9	9995	8.8
March	14	4.4	1658	9.0	9008	9.5	10680	9.4
April	18	5.6	1262	6.8	6500	6.9	7780	6.9
May	30	9.3	1513	8.2	6303	6.7	7846	6.9
June	26	8.1	1534	8.3	6970	7.4	8530	7.5
July	45	14.0	1581	8.6	7000	7.4	8626	7.6
August	34	10.6	1543	8.4	6163	6.5	7740	6.8
September	29	9.0	1497	8.1	6420	6.8	7946	7.0
October	30	9.3	1529	8.3	7933	8.4	9492	8.4
November	23	7.2	1575	8.5	10642	11.3	12240	10.8
December	32	10.0	1337	7.2	8725	9.2	10094	8.9
Unspecified	--	--	2	0.0	247	0.3	249	0.2
Total Number of Collisions	**321**	**100.0**	**18447**	**100.0**	**94589**	**100.0**	**113357**	**100.0**

Observations

The month of July experienced more fatal crashes than other months. The highest number of reported injury collisions was in January and the highest number of property damage collisions was in the month of November.

Table 2.2

Collision Occurrence by Day of Week

2003

Day of Week	Fatal Collisions N	%	Non-Fatal Injury Collisions N	%	Property Damage Collisions N	%	Total Collisions N	%
Monday	36	11.2	2711	14.7	13107	13.9	15854	14.0
Tuesday	37	11.5	2730	14.8	13387	14.2	16154	14.3
Wednesday	47	14.6	2775	15.0	14643	15.5	17465	15.4
Thursday	54	16.8	2772	15.0	14219	15.0	17045	15.0
Friday	50	15.6	3005	16.3	16129	17.1	19184	16.9
Saturday	53	16.5	2446	13.3	12964	13.7	15463	13.6
Sunday	44	13.7	2004	10.9	9836	10.4	11884	10.5
Unspecified	--	--	4	0.0	304	0.3	308	0.3
Total Number of Collisions	**321**	**100.0**	**18447**	**100.0**	**94589**	**100.0**	**113357**	**100.0**

Observations

The daily distribution of collisions indicated that overall Friday was the most collision-prone day of the week.

Table 2.3

Collision Occurrence by Time Period

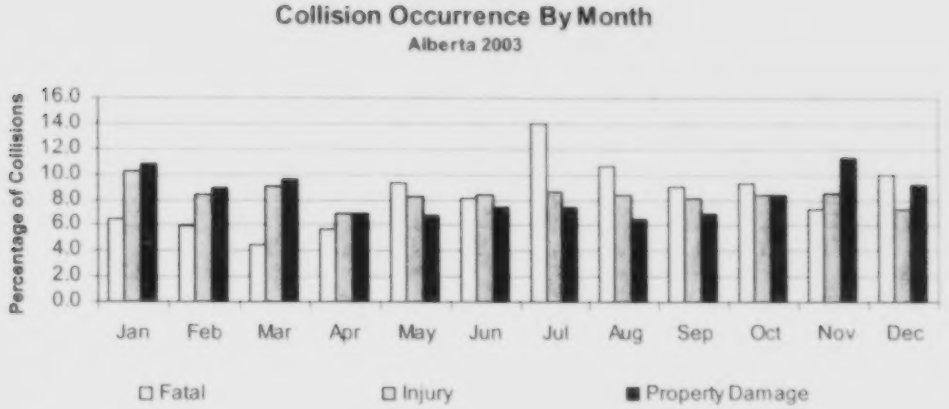
2003

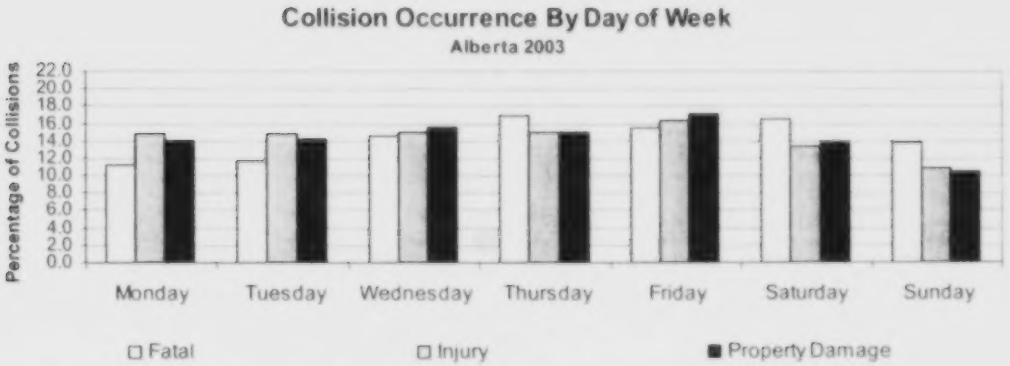
Time Period	Fatal Collisions N	%	Non-Fatal Injury Collisions N	%	Property Damage Collisions N	%	Total Collisions N	%
11:00 p.m. - 2:59 a.m.	50	15.6	1261	6.8	7123	7.5	8434	7.4
3:00 a.m. - 6:59 a.m.	29	9.0	760	4.1	4817	5.1	5606	4.9
7:00 a.m. - 10:59 a.m.	51	15.9	3168	17.2	16563	17.5	19782	17.5
11:00 a.m. - 2:59 p.m.	51	15.9	4421	24.0	21942	23.2	26414	23.3
3:00 p.m. - 6:59 p.m.	63	19.6	5973	32.4	26939	28.5	32975	29.1
7:00 p.m. - 10:59 p.m.	64	19.9	2735	14.8	15150	16.0	17949	15.8
Unspecified	13	4.0	129	0.7	2055	2.2	2197	1.9
Total Number of Collisions	**321**	**100.0**	**18447**	**100.0**	**94589**	**100.0**	**113357**	**100.0**

Observations

The afternoon rush hour period (3:00 p.m. – 6:59 p.m.) accounted for the largest percentage (29.1%) of collisions occurring in a 24 hour period. The least collision-prone time period was the early morning (3:00 a.m. – 6:59 a.m.).

Figure 3


Collision Occurrence By Month
Alberta 2003
Percentage of Collisions
16.0
14.0
12.0
10.0
8.0
6.0
4.0
2.0
0.0
Jan
Feb
Mar
Apr
May
Jun
Jul
Aug
Sep
Oct
Nov
Dec
Fatal
Injury
Property Damage


Collision Occurrence By Day of Week
Alberta 2003
Percentage of Collisions
22.0
20.0
18.0
16.0
14.0
12.0
10.0
8.0
6.0
4.0
2.0
0.0
Monday
Tuesday
Wednesday
Thursday
Friday
Saturday
Sunday
Fatal
Injury
Property Damage

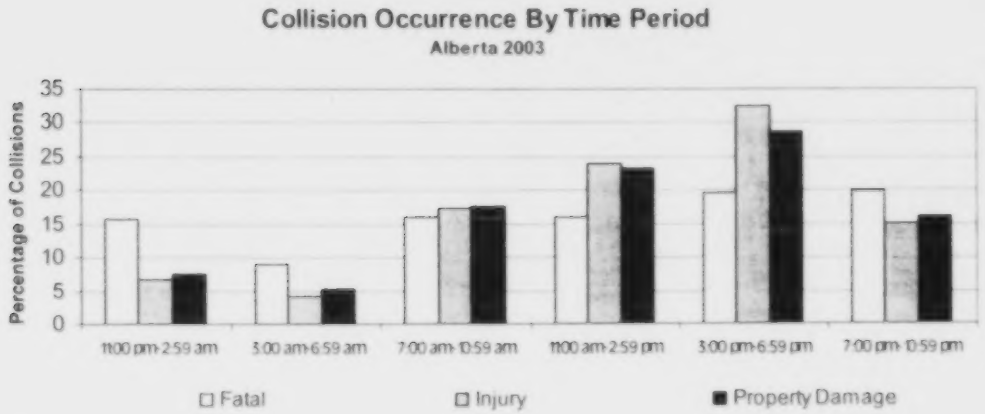

Collision Occurrence By Time Period
Alberta 2003
Percentage of Collisions
35
30
25
20
15
10
5
0
11:00 pm-2:59 am
3:00 am-6:59 am
7:00 am-10:59 am
11:00 am-2:59 pm
3:00 pm-6:59 pm
7:00 pm-10:59 pm
Fatal
Injury
Property Damage

Table 2.4

Collisions During 2003 Holidays

Holidays	Number Killed N	Number Injured N	Total Collisions* N
New Year's Day (January 1)	4	51	214
Family Day Long Weekend (February 14-17)	2	230	1264
Easter Long Weekend (April 17-21)	6	248	1001
Victoria Day Long Weekend (May 16-19)	8	255	834
Canada Day (July 1)	--	75	262
August Long Weekend (August 1-4)	8	283	871
Labour Day Long Weekend (Aug 29-September 1)	2	301	973
Thanksgiving Long Weekend (October 10-13)	4	235	911
Rememberance Day (November 11)	--	60	326
Christmas Season (December 24-28)	5	172	1017
TOTAL	**39**	**1910**	**7673**

Observations

The Victoria Day Long Weekend and the August Long Weekend recorded the highest number of individuals killed. The Labour Day Long Weekend recorded the highest number of injuries. The Family Day Long Weekend recorded the highest total number of collisions.

*Total collisions includes fatal, injury and property damage collisions.

*Note: Comparisons should be done with caution. The number of days for each holiday period within the year may vary. From year to year, holiday periods may also vary in length.

Victims

Road User Class

The majority of traffic victims were drivers and passengers of vehicles. Pedestrians and motorcyclists accounted for 4.5% and 2.4% of the total casualties, respectively.

Age of Casualties

Casualty rates per 10,000 population were highest for persons between the ages of 15 and 24. The lowest casualty rates were recorded for children 14 and under.

Table 3.1

Injuries and Fatalities by Road User Class

2003

Road User Class	Persons Killed N	Persons Killed %	Persons Injured N	Persons Injured %	Total Casualties N	Total Casualties %
Drivers	216	56.1	15858	60.0	16074	60.0
Passengers	99	25.7	7624	28.9	7723	28.8
Pedestrians	37	9.6	1172	4.4	1209	4.5
Motorcyclists	13	3.4	627	2.4	640	2.4
Bicyclists	3	0.8	589	2.2	592	2.2
Other	15	3.9	409	1.5	424	1.6
Unspecified	2	0.5	147	0.6	149	0.6
Total Casualties	**385**	**100.0**	**26426**	**100.0**	**26811**	**100.0**

Observations

The majority of traffic victims were drivers and passengers of vehicles. Pedestrians and motorcyclists accounted for 4.5% and 2.4% of the total casualties, respectively.

Table 3.2

Age of Casualties

2003

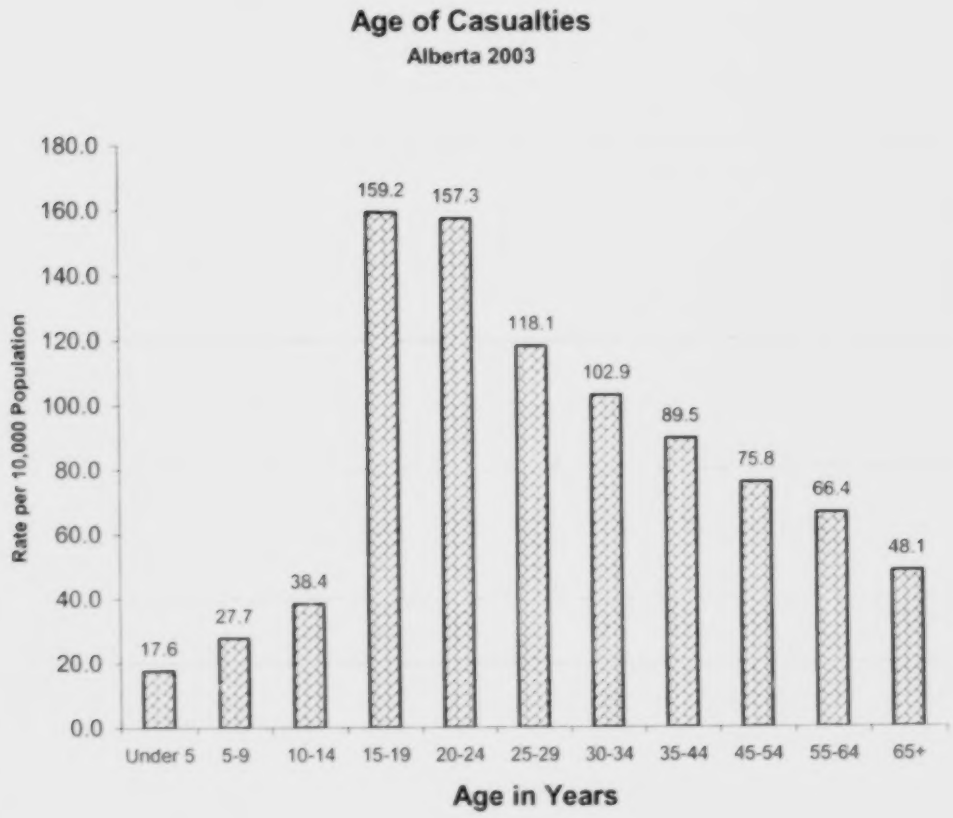
Age in Years	Persons Killed N	Persons Killed %	Persons Injured N	Persons Injured %	Casualty Rate Per 10,000 Population*
Under 5	5	1.3	334	1.3	17.6
5-9	5	1.3	565	2.1	27.7
10-14	3	0.8	860	3.3	38.4
15-19	57	14.8	3636	13.8	159.2
20-24	57	14.8	3776	14.3	157.3
25-29	36	9.4	2767	10.5	118.1
30-34	30	7.8	2400	9.1	102.9
35-44	70	18.2	4599	17.4	89.5
45-54	46	11.9	3428	13.0	75.8
55-64	32	8.3	1801	6.8	66.4
65 and over	44	11.4	1521	5.8	48.1
Unspecified	--	--	739	2.8	
Total Casualties	**385**	**100.0**	**26426**	**100.0**	

Observations

Casualty rates per 10,000 population were highest for persons between the ages of 15 and 24. The lowest casualty rates were recorded for children 14 years of age and younger.

*Based on estimates of the Alberta population by age groups and sex, July 1, 2003, Statistics Canada

Figure 4


Age of Casualties
Alberta 2003
Rate per 10,000 Population
180.0
160.0
140.0
120.0
100.0
80.0
60.0
40.0
20.0
0.0
17.6
27.7
38.4
159.2
157.3
118.1
102.9
89.5
75.8
66.4
48.1
Under 5
5-9
10-14
15-19
20-24
25-29
30-34
35-44
45-54
55-64
65+
Age in Years

Drivers

Age and Sex of Drivers

Collision rates per 1000 licensed drivers indicated that males 18 to 19 years old were more likely to be involved in a casualty collision than any other age group. The next age group most likely to be involved in casualty collisions were males 16 to 17 years old.

Driver Actions

Following too closely (32.3%), running off the road (15.4%) and left turn across path (11.0%) were the most frequently identified improper driver actions contributing to casualty collisions.

Table 4.1

Age and Sex of Drivers Involved in Casualty Collisions:

Per 1,000 Licensed Drivers

2003

	Male			Female			Total*		
Age of Driver	N	%	Per 1000** Licensed Drivers	N	%	Per 1000** Licensed Drivers	N	%	Per 1000** Licensed Drivers
Under 16	236	0.7	16.0	85	0.2	7.2	322	0.9	12.1
16-17	876	2.6	27.0	648	1.9	22.5	1524	4.5	24.9
18-19	1361	4.0	32.6	852	2.5	22.6	2213	6.5	27.9
20-24	2929	8.6	24.5	1874	5.5	17.4	4804	14.1	21.2
25-34	4472	13.1	17.9	2748	8.1	12.1	7221	21.2	15.1
35-44	4144	12.2	15.5	2935	8.6	11.7	7080	20.8	13.7
45-54	3344	9.8	13.7	2088	6.1	9.5	5433	15.9	11.7
55-64	1760	5.2	12.1	949	2.8	7.4	2709	8.0	9.9
65 and over	1407	4.1	10.8	648	1.9	6.2	2056	6.0	8.8
Unspecified	210	0.6		59	0.2		711	2.1	
Total Number of Drivers	**20739**	**60.9**	**16.7**	**12886**	**37.8**	**11.5**	**34073**	**100.0**	

Observations

Collision rates per 1000 licensed drivers indicated that males 18 to 19 years old were more likely to be involved in a casualty collision than any other age group. The next age group most likely to be involved in casualty collisions were males 16 to 17 years old.

*Total includes drivers whose sex was not specified on the collision report form. Includes bicyclists.

**Source: Government Services – Registries. Operator Statistics, December 31, 2003

Figure 5

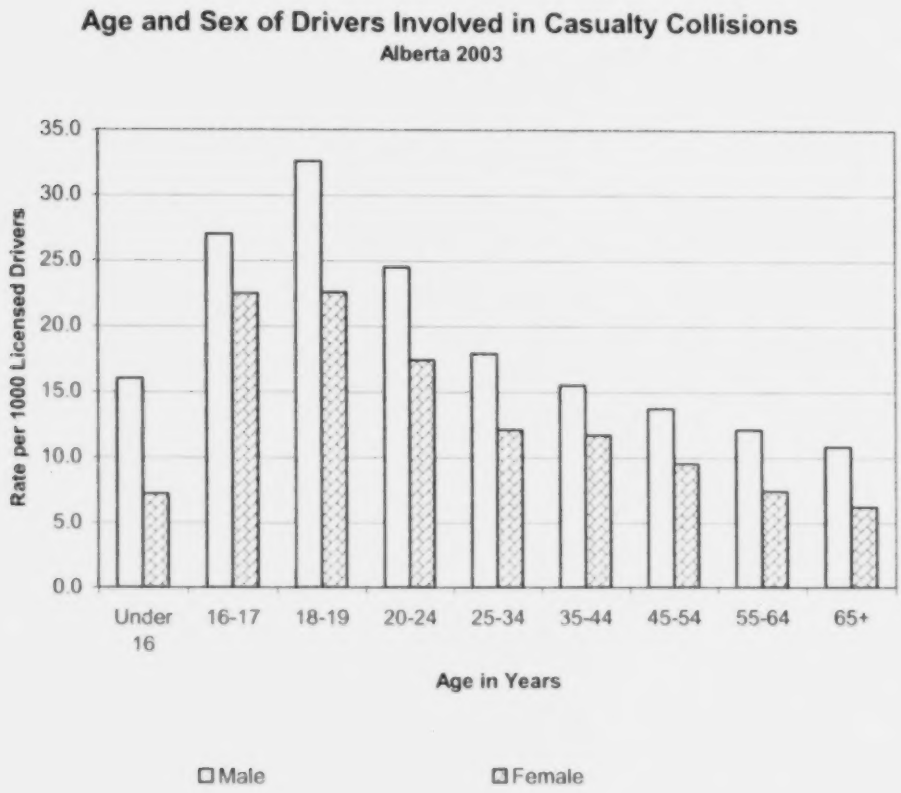

Age and Sex of Drivers Involved in Casualty Collisions
Alberta 2003
Rate per 1000 Licensed Drivers
35.0
30.0
25.0
20.0
15.0
10.0
5.0
0.0
Under 16
16-17
18-19
20-24
25-34
35-44
45-54
55-64
65+
Age in Years
Male
Female

Table 4.2

Improper Actions of Drivers Involved in Casualty Collisions*

2003

Improper Actions	Drivers in Fatal Collisions N	%	Drivers in Non-Fatal Injury Collisions N	%	Total Drivers in Casualty Collisions N	%
Followed Too Closely	5	2.1	4388	32.9	4393	32.3
Ran Off Road	100	41.2	1998	15.0	2098	15.4
Left Turn Across Path	8	3.3	1493	11.2	1501	11.0
Stop Sign Violation	31	12.8	1071	8.0	1102	8.1
Disobey Traffic Signal	8	3.3	961	7.2	969	7.1
Left of Centre	48	19.8	353	2.6	401	3.0
Failed to Yield Right of Way to Pedestrian	7	2.9	385	2.9	392	2.9
Improper Lane Change	1	0.4	368	2.8	369	2.7
Backed Unsafely	--	--	331	2.5	331	2.4
Improper Turn	2	0.8	315	2.4	317	2.3
Failed to Yield Right of Way - Uncontrolled Intersection	2	0.8	270	2.0	272	2.0
Yield Sign Violation	1	0.4	264	2.0	265	2.0
Improper Passing	5	2.1	127	1.0	132	1.0
Other	25	10.3	1022	7.7	1047	7.7
Total Number of Drivers	**243**	**100.0**	**13346**	**100.0**	**13589**	**100.0**

Observations

Following too closely (32.3%), running off the road (15.4%) and left turn across path (11.0%) were the most frequently identified improper driver actions contributing to casualty collisions.

*Based on those cases where driver actions were specified on the collision report form. Includes bicyclists.

Note: There was a total of 28191 drivers involved in casualty collisions for which a driver action was specified on the collision report form. 14602 were indicated as driving properly at the time of the collision.

Vehicles

Types of Vehicles

Passenger cars (52.6%) and pick-up trucks/vans (20.5%) were the vehicles most frequently involved in total casualty collisions.

Vehicular Factors

Less than 1.0% of vehicles involved in casualty collisions were identified as having a vehicle defect. The most common defect was defective brakes.

Point of Impact

The most common point of impact in casualty collisions involved the front of the vehicle. Approximately 40.7% of the impacts involved the centre front.

Table 5.1

Types of Vehicles Involved in Casualty Collisions*

2003

Type of Vehicle	Vehicles in Fatal Collisions N	%	Vehicles in Non-Fatal Injury Collisions N	%	Total Vehicles in Casualty Collisions N	%
Passenger Car	173	33.6	18070	52.9	18243	52.6
Pick-up Truck/Van	151	29.3	6967	20.4	7118	20.5
Mini-Van/MPV	73	14.2	5894	17.3	5967	17.2
Truck 4500 kg+	29	5.6	923	2.7	952	2.7
Motorcycle	13	2.5	616	1.8	629	1.8
Tractor-Trailer	58	11.3	566	1.7	624	1.8
Bicycle	2	0.4	591	1.7	593	1.7
Off-Highway Vehicle	7	1.4	148	0.4	155	0.4
Transit Bus	2	0.4	128	0.4	130	0.4
School Bus	2	0.4	73	0.2	75	0.2
Emergency Vehicle	--	--	56	0.2	56	0.2
Other Bus	--	--	29	0.1	29	0.1
Motorized Snow Vehicle	3	0.6	23	0.1	26	0.1
Construction Equipment	1	0.2	24	0.1	25	0.1
Motorhome	--	--	22	0.1	22	0.1
Farm Equipment	--	--	21	0.1	21	0.1
Intercity Bus	--	--	3	0.0	3	0.0
Moped	1	0.2	2	0.0	3	0.0
Other	--	--	3	0.0	3	0.0
Total Number of Vehicles	**515**	**100.0**	**34159**	**100.0**	**34674**	**100.0**

Observations

Passenger cars and pick-up trucks/vans were the vehicles most frequently involved in total casualty collisions. Overall, bicycles represented 1.7% and motorcycles 1.8% of the vehicles involved in casualty collisions. Truck tractors were 1.8% of total vehicles in casualty crashes, but 11.3% of vehicles in fatal crashes.

* Based on those cases where type of vehicle was specified on the collision report form.

Table 5.2

Vehicle Factors Involved in Casualty Collisions*

2003

Vehicular Factors	Vehicles in Fatal Collisions N	%	Vehicles in Non-Fatal Injury Collisions N	%	Total Vehicles in Casualty Collisions N	%
No Apparent Defect	389	97.0	26585	99.3	26974	99.2
Defective Brakes	5	1.2	59	0.2	64	0.2
Tires Failed	2	0.5	38	0.1	40	0.1
Lighting Defect	1	0.2	22	0.1	23	0.1
Improper Load/Shift	--	--	9	0.0	9	0.0
Other	4	1.0	67	0.3	71	0.3
Total Number of Vehicles	**401**	**100.0**	**26780**	**100.0**	**27181**	**100.0**

Observations

Less than 1.0% of vehicles involved in casualty collisions were identified as having a vehicle defect. The most common was defective brakes.

* Based on those cases where a vehicle factor was specified on the collision report form. This information does not indicate whether or not a mechanical inspection of the collision-involved vehicle was conducted.

Table 5.3

Point of Impact on Vehicles Involved in Casualty Collisions*

2003

Point of Impact	Vehicles in Fatal Collisions N	%	Vehicles in Non-Fatal Injury Collisions N	%	Total Vehicles in Casualty Collisions N	%
Centre Front	240	48.2	13205	40.6	13445	40.7
Centre Rear	24	4.8	7909	24.3	7933	24.0
Right Front	21	4.2	2616	8.0	2637	8.0
Left Front	38	7.6	2509	7.7	2547	7.7
Rollover	74	14.9	1729	5.3	1803	5.5
Left Side	37	7.4	1154	3.5	1191	3.6
Right Side	30	6.0	1146	3.5	1176	3.6
Right Rear	6	1.2	911	2.8	917	2.8
Left Rear	8	1.6	885	2.7	893	2.7
Attachment	14	2.8	256	0.8	270	0.8
Undercarriage	3	0.6	126	0.4	129	0.4
Top	3	0.6	66	0.2	69	0.2
Total Number of Vehicles	**498**	**100.0**	**32512**	**100.0**	**33010**	**100.0**

Observations

The most common point of impact in casualty collisions involved the front of the vehicle. 40.7% of the impacts involved the centre front, while 24.0% of the impacts involved the centre rear.

* Based on those cases where point of impact was specified on the collision report form.

Environment

Location

The majority of fatal crashes (68.5%) occurred in rural areas, whereas the majority of injury (79.2%) and property damage (79.8%) crashes occurred in urban areas.

Surface Conditions

The majority (56.3%) of all casualty collisions occurred when surface conditions were dry. Slush, snow or ice was involved in 16.8% of fatal collisions and 24.0% of non-fatal injury collisions.

Table 6.1

Location of Collisions

2003

Location	Fatal Collisions N	%	Non-Fatal Injury Collisions N	%	Property Damage Collisions N	%	Total Collisions N	%
Urban	101	31.5	14614	79.2	75496	79.8	90211	79.6
Rural	220	68.5	3833	20.8	19093	20.2	23146	20.4
Total Number of Collisions	**321**	**100.0**	**18447**	**100.0**	**94589**	**100.0**	**113357**	**100.0**

Observations

Collisions which occurred in rural areas accounted for 68.5% of all fatal crashes. Collisions occurring in urban areas resulted in the highest proportion of non-fatal injury collisions (79.2%) and property damage crashes (79.8%).

Table 6.2

Casualty Collision Occurrence by Surface Condition

2003

Surface Condition	Fatal Collisions N	%	Non-Fatal Injury Collisions N	%	Total Casualty Collisions N	%
Dry	226	70.4	10334	56.0	10560	56.3
Slush/Snow/Ice	54	16.8	4424	24.0	4478	23.9
Wet	23	7.2	1678	9.1	1701	9.1
Loose Surface Material	10	3.1	348	1.9	358	1.9
Muddy	--	--	33	0.2	33	0.2
Other	4	1.2	101	0.5	105	0.6
Unspecified	4	1.2	1529	8.3	1533	8.2
Total Number of Collisions	**321**	**100.0**	**18447**	**100.0**	**18768**	**100.0**

Observations

The majority (56.3%) of casualty collisions occurred when surface conditions were dry. Slush, snow or ice was involved in 16.8% of fatal collisions and 24.0% of non-fatal injury collisions.

Special Types of Vehicles

Motorcycles

- Based on motorcycle registrations, the involvement rate of motorcycles in fatal collisions has decreased but in injury collisions has increased in 2003.
- The majority of motorcycle casualty collisions involved male drivers. Motorcycle drivers under the age of 25 had the highest involvement rate per 1000 licensed drivers. In particular, 16-17 year old motorcycle drivers had an involvement rate per 1000 licensed drivers of 71.4, a rate almost four times greater than that of the 20-24 year old motorcycle drivers.
- Compared to drivers involved in total casualty collisions, motorcycle drivers were more likely to run off the road or pass improperly. However, motorcycle drivers were less likely to follow too closely, to make an unsafe left turn or commit a stop sign violation.
- Compared to drivers involved in all types of vehicle casualty collisions, motorcycle drivers were more likely to have consumed alcohol before the crash.
- Vehicular factors were identified for 1.3% of motorcycles involved in casualty collisions compared to 0.8% for all types of vehicles involved in casualty collisions.
- The majority of casualty collisions involving motorcycles occurred on dry roads.

Table 7.1

Motorcycles Involved in Casualty Collisions

1999-2003

Number of Motorcycles	**2003**	**2002**	**2001**	**2000**	**1999**
Fatal	13	25	21	14	11
Non-Fatal Injury	616	558	629	476	447
Total Number of Motorcycles Involved in Casualty Collisions	**629**	**583**	**650**	**490**	**458**
Casualties*					
Number Killed	13	24	21	14	10
Number Injured	666	620	701	540	509
Total Casualties in Collisions Involving Motorcycles	**679**	**644**	**722**	**554**	**519**
Number of Motorcycles Involved in Casualty Collisions Per 10,000 Registered Motorcycles**					
Fatal Collisions	2.4	4.8	4.2	3.2	2.8
Non-Fatal Injury Collisions	111.5	106.2	126.9	109.3	112.9

Observations

Based on motorcycle registrations in 2003, the involvement rate of motorcycles in fatal collisions has decreased but in injury collisions has increased.

*This refers to the total number of people killed and injured in collisions in which a motorcycle was involved. It does not refer to the number of motorcyclists killed and injured.

**Source: Based on vehicle registration statistics, Government Services – Registries, December 31, 2003.

Figure 6

Number of Motorcycles Involved in Fatal Collisions
Alberta 1999 - 2003
Rate per 10,000 Registered Motorcycles
8.0
7.0
6.0
5.0
4.0
3.0
2.0
1.0
0.0
2.4
4.8
4.2
3.2
2.8
2003
2002
2001
2000
1999

Table 7.2

Age and Sex of Motorcycle Drivers Involved in Casualty Collisions

2003

Age of Motorcycle Driver	Male N	Male %	Female N	Female %	Total* N	Total* %	Rate Per 1,000 Licensed Motorcycle Drivers**
Under 16	7	1.1	2	0.3	9	1.4	
16-17	20	3.2	1	0.2	21	3.4	71.4
18-19	51	8.2	2	0.3	53	8.5	47.2
20-24	150	24.0	4	0.6	154	24.6	18.8
25-34	115	18.4	9	1.4	124	19.8	3.8
35-44	84	13.4	17	2.7	101	16.2	1.7
45-54	108	17.3	10	1.6	119	19.0	1.8
55-64	23	3.7	2	0.3	25	4.0	1.0
65 and over	11	1.8	--	--	11	1.8	1.1
Unspecified	--	--	--	--	8	1.3	
Total Number of Motorcycle Drivers	**569**	**91.1**	**47**	**7.4**	**625**	**100.0**	

Observations

The majority of motorcycle casualty collisions involved male drivers. Based on involvement per 1,000 licensed operators, motorcycle drivers under the age of 25 were most likely to be involved in collisions. In particular, 16-17 year old motorcycle drivers had the highest involvement rate per 1,000 licensed motorcyclists. These age and sex comparisons are limited due to the lack of driving exposure data. That is, in order to make valid age comparisons, it is important to take into account the number of kilometers driven annually by each age and sex group of motorcycle operators.

Note: In Alberta, Class 6 (motorcycle) licenses are not issued to operators under 16 years of age.

*Total includes drivers whose sex was not specified on the collision report form.

**Source: Government Services – Registries. Operator Statistics, December 31, 2003.

Table 7.3

Improper Actions of Motorcycle Drivers Involved in Casualty Collisions*

2003

Improper Actions of Motorcycle Driver	N	%	Driver Actions in Total Casualty Collisions (All Vehicle Types) %
Ran Off Road	104	40.0	15.4
Followed Too Closely	35	13.5	32.3
Left of Center	12	4.6	3.0
Improper Passing	12	4.6	1.0
Disobey Traffic Signal	11	4.2	7.1
Improper Turn	10	3.8	2.3
Left Turn Across Path	8	3.1	11.0
Improper Lane Change	7	2.7	2.7
Yield Sign Violation	5	1.9	2.0
Failed to Yield Right of Way to Pedestrian	4	1.5	2.9
Stop Sign Violation	2	0.8	8.1
Failed to Yield Right of Way - Uncontrolled Intersection	2	0.8	2.0
Other	48	18.5	7.7
Total Number of Motorcycle Drivers	**260**	**100.0**	

Observations

Compared to drivers involved in total casualty collisions, motorcycle drivers were more likely to run off the road or pass improperly. However, motorcycle drivers were less likely to follow too closely, make an unsafe left turn or commit a stop sign violation.

*Based on those cases where driver actions were specified on the collision report form.

Note: There was a total of 512 motorcycle drivers involved in casualty collisions for which a driver action was specified on the collision report form. 252 were indicated as driving properly at the time of the collision.

Table 7.4

Condition of Motorcycle Drivers* Involved in Casualty Collisions

2003

Condition of Motorcycle Driver	N	%	Driver Condition in Total Casualty Collisions (All Vehicle Types) %
Normal	491	91.9	93.4
Had Been Drinking	31	5.8	2.4
Alcohol Impaired	11	2.1	2.5
Total Alcohol Involvement	**42**	**7.9**	**4.9**
Other	1	0.2	0.5
Total Number of Motorcycle Drivers	**534**	**100.0**	

Observations

The motorcycle driver's condition was a contributory factor for 8.1% of the involved motorcycle drivers. Compared to drivers involved in total casualty collisions, motorcycle drivers were more likely to have consumed alcohol prior to the crash.

*Based on those cases where driver condition was specified on the collision report form.

Table 7.5

Motorcycle Vehicular Factors* in Casualty Collisions

2003

Vehicular Factors	N	%	Vehicular Factors in Total Casualty Collisions (All Vehicle Types) %
No Apparent Defect	524	98.7	99.2
Tires Failed	1	0.2	0.1
Lighting Defect	2	0.4	0.1
Other	4	0.8	0.3
Total Number of Motorcycles	**531**	**100.0**	

Observations

Vehicular factors were identified for 1.3% of the motorcycles involved in casualty collisions, compared to 0.8% for all types of vehicles involved in casualty collisions.

*Based on those cases where a vehicular factor was specified on the collision report form. This does not indicate that a mechanical inspection of the collision-involved motorcycle was conducted.

Table 7.6

Casualty Collisions Involving Motorcycles:

Month of Occurrence

2003

Month	N	%
January	2	0.3
February	--	--
March	11	1.8
April	37	6.1
May	81	13.3
June	96	15.8
July	123	20.2
August	121	19.9
September	79	13.0
October	56	9.2
November	--	--
December	2	0.3
Total Number of Collisions	**608**	**100.0**

Observations

The month of July recorded the highest proportion of casualty crashes involving motorcycles.

Table 7.7

Casualty Collisions Involving Motorcycles:

Road Surface Condition

2003

Road Surface Condition	N	%
Dry	529	87.0
Loose Surface Material	32	5.3
Wet	18	3.0
Muddy	1	0.2
Other	2	0.3
Unspecified	26	4.3
Total Number of Collisions	**608**	**100.0**

Observations

The majority of casualty collisions involving motorcycles occurred on dry roads. Loose material on the road surface was involved in 5.3% of motorcycle casualty crashes. Wet roads were the scene of 3.0% of motorcycle casualty collisions.

Special Types of Vehicles

Truck Tractors

- In 2003, there were 76 persons killed and 782 injured in collisions involving truck tractors. This represents an increase in casualties from 2002.
- Compared to drivers of other vehicles, truck tractor drivers were more likely to run off the road, make an improper lane change, or fail to yield the right of way at an uncontrolled intersection. However, operators of truck tractors were less likely than other vehicle operators to follow too closely, make an unsafe left turn or disobey a traffic signal.
- Truck tractor drivers were less likely to consume alcohol before the crash than were drivers in total casualty collisions.
- Vehicular factors were more likely to be present in truck tractor casualty collisions than in total casualty collisions.
- The occurrence of casualty collisions involving truck tractors was highest in the month of January.

Table 7.8

Truck Tractors Involved in Casualty Collisions

1999-2003

Number of Truck Tractors	2003	2002	2001	2000	1999
Fatal	58	43	43	60	41
Non-Fatal Injury	566	505	507	512	445
Total Number of Truck Tractors Involved in Casualty Collisions	**624**	**548**	**550**	**572**	**486**
Casualties*					
Number Killed	76	49	52	76	48
Number Injured	782	744	686	740	606
Total Casualties in Collisions Involving Truck Tractors	**858**	**793**	**738**	**816**	**654**

Observations

In 2003, there were 76 persons killed and 782 injured in collisions involving truck tractors. This represents an increase in casualties from 2002. The total number of truck tractors involved in casualty crashes increased in 2003 standing at 624, the five-year high.

*This refers to the total number of people killed and injured in collisions in which a truck tractor was involved. It does not refer to the number of truck tractor drivers killed and injured.

Table 7.9

Improper Actions of Truck Tractor Drivers Involved in Casualty Collisions*

2003

Improper Actions of Truck Tractor Driver	N	%	Driver Actions in Total Casualty Collisions (All Vehicle Types) %
Ran Off Road	75	34.4	15.4
Followed Too Closely	46	21.1	32.3
Stop Sign Violation	19	8.7	8.1
Disobey Traffic Signal	12	5.5	7.1
Improper Lane Change	10	4.6	2.7
Left Turn Across Path	9	4.1	11.0
Left of Center	7	3.2	3.0
Failed to Yield Right of Way - Uncontrolled Intersection	7	3.2	2.0
Improper Passing	5	2.3	1.0
Backed Unsafely	4	1.8	2.4
Improper Turn	4	1.8	2.3
Yield Sign Violation	3	1.4	2.0
Other	17	7.8	7.7
Total Number of Drivers	**218**	**100.0**	

Observations

Compared to drivers of other vehicles, truck tractor drivers were more likely to run off the road, make an improper lane change, or fail to yield the right of way at an uncontrolled intersection. However, operators of truck tractors were less likely than other vehicle operators to follow too closely, make an unsafe left turn or disobey a traffic signal.

*Based on those cases where driver actions were specified on the collision report form.

Note: There was a total of 521 truck-tractor drivers involved in casualty collisions for which a driver action was specified on the collision report form. 303 were indicated as driving properly at the time of the collision.

Table 7.10

Condition* of Truck Tractor Drivers Involved in Casualty Collisions

2003

Driver Condition	N	%	Driver Condition in Total Casualty Collisions (All Vehicle Types) %
Normal	506	95.1	93.4
Had Been Drinking	3	0.6	2.4
Alcohol Impaired	2	0.4	2.5
Total Alcohol Involvement	**5**	**1.0**	**4.9**
Fatigued/Asleep	19	3.6	1.0
Impaired by Drugs	1	0.2	0.2
Other	1	0.2	0.5
Total Number of Drivers	**532**	**100.0**	

Observations

The condition of the truck tractor driver was a contributory factor for 4.9% of the drivers involved. Truck tractor drivers were less likely to consume alcohol before the crash than were drivers involved in total casualty collisions (1.0% compared to 4.9%). However, they were more likely to have been fatigued or asleep at the time of the crash.

*Based on those cases where driver condition was specified on the collision report form.

Table 7.11

Vehicular Factors* of Truck Tractors Involved in Casualty Collisions

2003

Vehicular Factors	N	%	Vehicular Factors in Total Casualty Collisions (All Vehicle Types) %
No Apparent Defect	522	98.3	99.2
Improper Load/Shift	3	0.6	0.0
Defective Brakes	3	0.6	0.2
Tires Failed	1	0.2	0.1
Other	2	0.4	0.3
Total Number of Truck Tractors	**531**	**100.0**	

Observations

Vehicular factors were identified for 1.7% of truck tractors in casualty collisions. Vehicular factors were more likely to be present in truck tractor collisions than in total casualty collisions.

*Based on those cases where a vehicular factor was specified on the collision report form. This does not indicate whether or not a mechanical inspection of the collision-involved truck tractor was conducted.

Table 7.12

Casualty Collisions Involving Truck Tractors:

Month of Occurrence

2003

Month	N	%
January	70	11.6
February	46	7.7
March	55	9.2
April	35	5.8
May	31	5.2
June	34	5.7
July	53	8.8
August	60	10.0
September	55	9.2
October	58	9.7
November	64	10.6
December	40	6.7
Total Number of Collisions	**601**	**100.0**

Observations

The occurrence of casualty collisions involving truck tractors was highest in the month of January. The lowest number of truck tractor casualty collisions occurred during May.

Special Types of Vehicles

Trains

- In 2003, 3 people were killed and 35 people were injured in crashes in which a train was involved. The number of casualties involving trains has decreased from 2002.
- The largest number of casualty collisions involving trains occurred in the months of January and November.
- A large percentage of drivers involved in collisions with a train disobeyed a traffic control device.

Table 7.13

Trains Involved in Casualty Collisions

1999-2003

Number of Trains	**2003**	**2002**	**2001**	**2000**	**1999**
Fatal	3	5	6	3	3
Non-Fatal Injury	22	32	25	20	19
Total Number of Trains Involved in Casualty Collisions	**25**	**37**	**31**	**23**	**22**
Casualties*					
Number Killed	3	6	6	4	4
Number Injured	35	38	30	34	27
Total Casualties in Collisions Involving Trains	**38**	**44**	**36**	**38**	**31**

Observations

The number of trains involved in casualty collisions decreased from 2002. The number of casualties resulting from these collisions has also decreased.

*This refers to the total number of people killed and injured in collisions involving a train.

Table 7.14

Casualty Collisions Involving Trains:

Month of Occurrence

2003

Month	Fatal Collisions N	%	Non-Fatal Injury Collisions N	%	Total Casualty Collisions N	%
January	--	--	5	22.7	5	20.0
February	--	--	2	9.1	2	8.0
March	1	33.3	--	--	1	4.0
April	--	--	2	9.1	2	8.0
May	--	--	3	13.6	3	12.0
June	--	--	--	--	--	--
July	--	--	2	9.1	2	8.0
August	--	--	3	13.6	3	12.0
September	--	--	--	--	--	--
October	--	--	1	4.5	1	4.0
November	1	33.3	4	18.2	5	20.0
December	1	33.3	--	--	1	4
Total Number of Collisions	**3**	**100.0**	**22**	**100.0**	**25**	**100.0**

Observations

The largest number of casualty collisions involving trains occurred in the months of January and November.

Table 7.15

Actions* of Drivers Involved in Casualty Collisions With Trains

2003

Driver Actions	Drivers in Fatal Collisions N	%	Drivers in Non-Fatal Injury Collisions N	%	Total Drivers in Casualty Collisions N	%
Driving Properly	--	--	4	18.2	4	16.0
Ran Off Road	--	--	1	4.5	1	4.0
Disobey Traffic Signal	2	66.7	9	40.9	11	44.0
Failed to Yield Right of Way - Uncontrolled Intersection	1	33.3	3	13.6	4	16.0
Stop Sign Violation	--	--	1	4.5	1	4.0
Other	--	--	4	18.2	4	16.0
Total Number of Drivers	**3**	**100.0**	**22**	**100.0**	**25**	**100.0**

Observations

A large percentage of drivers involved in collisions with a train disobeyed a traffic control device.

*Based on those cases where driver actions were specified on the collision report form.

Pedestrians

- Pedestrian casualty collisions were more likely to occur in January and September. February experienced the least number of pedestrian crashes.
- Pedestrian casualty collisions were most likely to occur on Wednesday and least likely to occur on Sunday.
- Pedestrian casualty collisions were most likely to occur during the evening rush-hour period (3:00-6:59 p.m.).
- 36.6% of the drivers in collisions involving a pedestrian were recorded as failing to yield the right of way to the pedestrian.
- The casualty rate per population was highest for pedestrians between the ages of 15 and 19.
- Of pedestrians involved in injury collisions, 14.8% had consumed alcohol before the collision, compared to 44.8% involved in fatal collisions.
- Of those pedestrians who had consumed alcohol prior to the collision, the highest rate of involvement per 10,000 population was for pedestrians 20-24 years of age.

Table 8.1

Casualty Collisions Involving Pedestrians:

Month of Occurrence

2003

Month of Collision	N	%
January	111	9.6
February	80	6.9
March	95	8.2
April	86	7.4
May	91	7.8
June	105	9.1
July	93	8.0
August	91	7.8
September	111	9.6
October	102	8.8
November	88	7.6
December	107	9.2
Total Number of Collisions	**1160**	**100.0**

Observations

Pedestrian casualty collisions were more likely to occur in January and September. February experienced the least number of pedestrian crashes.

Table 8.2

Casualty Collisions Involving Pedestrians:

Day of Week

2003

Day of Week	N	%
Monday	161	13.9
Tuesday	182	15.7
Wednesday	197	17.0
Thursday	185	15.9
Friday	183	15.8
Saturday	148	12.8
Sunday	104	9.0
Total Number of Collisions	**1160**	**100.0**

Observations

Pedestrian casualty collisions were most likely to occur on Wednesday and least likely to occur on Sunday.

Table 8.3

Casualty Collisions Involving Pedestrians:

Time Period

2003

Time Period	N	%
11:00 p.m. - 2:59 a.m.	115	9.9
3:00 a.m. - 6:59 a.m.	37	3.2
7:00 a.m. - 10:59 a.m.	171	14.7
11:00 a.m. - 2:59 p.m.	261	22.5
3:00 p.m. - 6:59 p.m.	374	32.2
7:00 p.m. - 10:59 p.m.	195	16.8
Unspecified	7	0.6
Total Number of Collisions	**1160**	**100.0**

Observations

Pedestrian casualty collisions were most likely to occur during the evening rush-hour period from 3:00 p.m. to 6:59 p.m. These collisions were least likely to occur during the early morning hours (3:00 a.m. to 6:59 a.m.).

Table 8.4

Casualty Collisions Involving Pedestrians:

Location

2003

Location	N	%
Urban	1112	95.9
Rural	48	4.1
Total Number of Collisions	**1160**	**100.0**

Observations

The majority of pedestrian casualty collisions (95.9%) occurred in urban areas. Only 4.1% occurred in rural areas.

Table 8.5

Actions* of Drivers Involved in Casualty Collisions with Pedestrians

2003

Driver Actions	N	%
Driving Properly	389	40.9
Failed to Yield Right of Way To Pedestrian	348	36.6
Backed Unsafely	76	8.0
Ran Off Road	32	3.4
Stop Sign Violation	13	1.4
Improper Turn	12	1.3
Followed Too Closely	11	1.2
Disobey Traffic Signal	8	0.8
Failed to Yield Right of Way - Uncontrolled Intersection	8	0.8
Left Turn Across Path	6	0.6
Improper Passing	3	0.3
Left of Centre	2	0.2
Improper Lane Change	2	0.2
Other	42	4.4
Total Number of Drivers	**952**	**100.0**

Observations

40.9% of the drivers involved in pedestrian crashes were recorded as driving properly. However, 36.6% of the drivers involved in pedestrian casualty collisions failed to yield the right of way to the pedestrian.

*Based on those cases where driver actions were specified on the collision report form.

Table 8.6

Age of Pedestrian Casualties

2003

Age in Years	Pedestrians Killed N	Pedestrians Injured N	Total Pedestrian Casualties N	%	Pedestrian Casualty Rate Per 10,000 Population*
Under 5	1	31	32	2.6	1.7
5 - 9	--	51	51	4.2	2.5
10 - 14	--	133	133	11.0	5.9
15 - 19	4	168	172	14.2	7.4
20 - 24	6	137	143	11.8	5.9
25 - 29	4	79	83	6.9	3.5
30 - 34	1	71	72	6.0	3.1
35 - 44	10	184	194	16.0	3.7
45 - 54	4	139	143	11.8	3.1
55 - 64	3	72	75	6.2	2.7
65 and over	4	91	95	7.9	2.9
Unspecified	--	16	16	1.3	
Total Number of Pedestrian Casualties	**37**	**1172**	**1209**	**100.0**	

Observations

The casualty rate per population was highest for pedestrians between the ages of 15 and 19. The lowest casualty rate was recorded for persons under 5 years of age.

*Source: Based on estimates of the Alberta population by age groups and sex, July 1, 2003, Statistics Canada

Figure 7

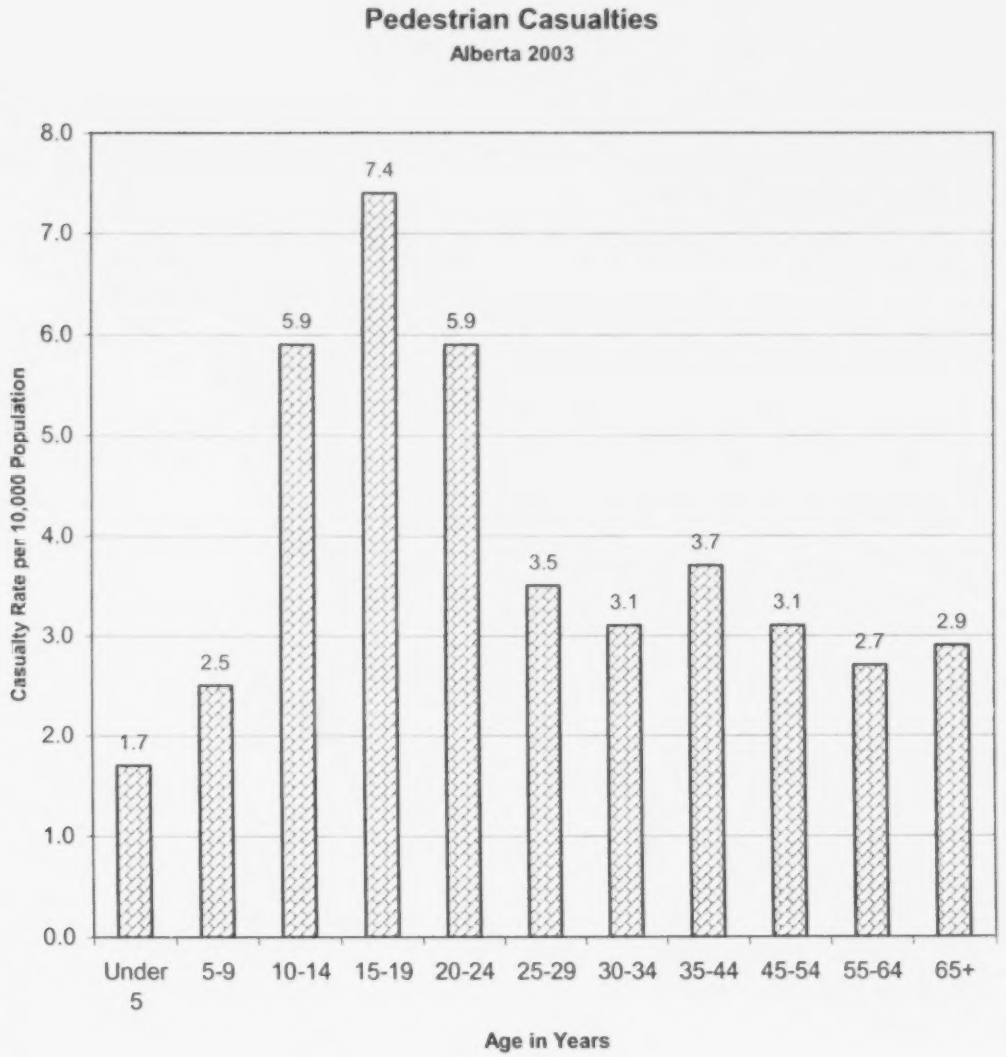

Pedestrian Casualties
Alberta 2003
Casualty Rate per 10,000 Population
8.0
7.0
6.0
5.0
4.0
3.0
2.0
1.0
0.0
1.7
2.5
5.9
7.4
5.9
3.5
3.1
3.7
3.1
2.7
2.9
Under 5
5-9
10-14
15-19
20-24
25-29
30-34
35-44
45-54
55-64
65+
Age in Years

Table 8.7

Condition of Pedestrians Involved in Casualty Collisions*

2003

Condition of Pedestrian	Pedestrians in Fatal Collisions N	%	Pedestrians in Non-Fatal Injury Collisions N	%	Total Pedestrians in Casualty Collisions N	%
Normal	16	55.2	777	84.3	793	83.4
Had Been Drinking	11	37.9	75	8.1	86	9.0
Alcohol Impaired	2	6.9	61	6.6	63	6.6
Total Alcohol Involvement	**13**	**44.8**	**136**	**14.8**	**149**	**15.7**
Impaired by Drugs	--	--	1	0.1	1	0.1
Other	--	--	8	0.9	8	0.8
Total Number of Pedestrians	**29**	**100.0**	**922**	**100.0**	**951**	**100.0**

Observations

Of pedestrians involved in injury collisions, 14.8% had consumed alcohol before the collision, compared to 44.8% involved in fatal collisions. As the severity of the collision increased, the involvement of alcohol increased dramatically.

*Based only on those cases where pedestrian condition was specified on the collision report form.

Table 8.8

Age of Drinking Pedestrians Involved in Casualty Collisions*

2003

Age in Years	N	%	Rate per 10,000 Population**
Under 10	--	--	--
10 - 14	--	--	--
15 - 19	22	14.8	0.9
20 - 24	33	22.1	1.4
25 - 29	19	12.8	0.8
30 - 34	13	8.7	0.6
35 - 44	32	21.5	0.6
45 - 54	18	12.1	0.4
55 - 64	6	4.0	0.2
65 and over	2	1.3	0.1
Unspecified	4	2.7	
Total Number of Pedestrian Casualties	**149**	**100.0**	

Observations

Of those pedestrians who had consumed alcohol prior to the collision, the highest rate of involvement per 10,000 population was for pedestrians 20 – 24 years of age.

* Based on those cases where pedestrian condition was specified on the collision report form.

** Source: Based on estimates of the Alberta population by age groups and sex, July 1, 2003, Statistics Canada.

Bicyclists

- Casualty collisions involving bicycles were more likely to occur in the month of June.
- Weekdays experienced the most casualty collisions involving bicycles. As well, the largest number of these crashes (37.7%) occurred during the evening rush-hour period.
- Young bicyclists, 10-14 years of age, were the group most frequently involved in bicycle casualty crashes.
- Compared to operators of all vehicles in casualty collisions, bicyclists were more likely to fail to yield right-of-way at an uncontrolled intersection, disobey a traffic signal or be left of the centre line.
- 2.6% of bicyclists involved in casualty collisions had consumed alcohol before the crash.

Table 9.1

Casualty Collisions Involving Bicycles:

Month of Occurrence

2003

Month of Collision	N	%
January	11	1.9
February	6	1.0
March	15	2.5
April	39	6.6
May	81	13.7
June	102	17.3
July	92	15.6
August	84	14.2
September	85	14.4
October	68	11.5
November	2	0.3
December	6	1.0
Total Number of Collisions	**591**	**100.0**

Observations

The majority of casualty crashes involving bicycles occurred during the month of June.

Table 9.2

Casualty Collisions Involving Bicycles:

Day of Week

2003

Day of Week	N	%
Monday	104	17.6
Tuesday	93	15.7
Wednesday	85	14.4
Thursday	84	14.2
Friday	97	16.4
Saturday	64	10.8
Sunday	64	10.8
Total Number of Collisions	**591**	**100.0**

Observations

Casualty collisions involving bicycles were most likely to occur on weekdays.

Table 9.3

Casualty Collisions Involving Bicycles:

Time Period

2003

Time Period	N	%
11:00 p.m. - 2:59 a.m.	19	3.2
3:00 a.m. - 6:59 a.m.	14	2.4
7:00 a.m. - 10:59 a.m.	88	14.9
11:00 a.m. - 2:59 p.m.	135	22.8
3:00 p.m. - 6:59 p.m.	223	37.7
7:00 p.m. - 10:59 p.m.	102	17.3
Unspecified	10	1.7
Total Number of Collisions	**591**	**100.0**

Observations

The largest proportion of casualty crashes (37.7%) involving bicycles occurred during the evening rush-hour period of 3:00 p.m. – 6:59 p.m.

Table 9.4

Age and Sex of Bicyclists Involved in Casualty Collisions

2003

Age in Years	Male N	%	Female N	%	Total* N	%
Under 5	4	0.7	--	--	4	0.7
5 - 9	41	6.9	17	2.9	58	9.8
10 - 14	85	14.3	27	4.6	113	19.1
15 - 19	68	11.5	12	2.0	80	13.5
20 - 24	53	8.9	22	3.7	75	12.6
25 - 29	32	5.4	14	2.4	46	7.8
30 - 34	35	5.9	10	1.7	45	7.6
35 - 44	67	11.3	22	3.7	90	15.2
45 - 54	29	4.9	7	1.2	36	6.1
55 - 64	10	1.7	4	0.7	14	2.4
65 and over	7	1.2	2	0.3	9	1.5
Unspecified	14	2.4	2	0.3	23	3.9
Total Number of Bicyclists	**445**	**75.0**	**139**	**24.4**	**593**	**100.0**

Observations

The majority of bicycle casualty collisions involved male bicyclists. The 10-14 year old age group was most frequently involved in these collisions.

*Total includes bicyclists whose sex was not specified on the collision report form.

Table 9.5

Improper Actions of Bicyclists Involved in Casualty Collisions

2003

Improper Actions of Bicyclists	N	%	Driver Actions in Total Casualty Collisions (All Vehicle Types) %
Disobey Traffic Signal	42	14.6	7.1
Failed to Yield Right of Way - Uncontrolled Intersection	32	11.1	2.0
Stop Sign Violation	23	8.0	8.1
Left of Centre	18	6.3	3.0
Left Turn Across Path	13	4.5	11.0
Ran Off Road	10	3.5	15.4
Yield Sign Violation	6	2.1	2.0
Improper Passing	5	1.7	1.0
Improper Lane Change	5	1.7	2.7
Improper Turn	4	1.4	2.3
Followed Too Closely	3	1.0	32.3
Failed to Yield Right of Way to Pedestrian	1	0.3	2.9
Other	126	43.8	7.7
Total Number of Bicyclists	**288**	**100.0**	

Observations

Compared to operators of all vehicles in casualty collisions, bicyclists were more likely to fail to yield right-of-way at an uncontrolled intersection, disobey a traffic signal or be left of the centre line.

*Based on those cases where driver actions were specified on the collision report form.

Note: There was a total of 423 bicyclists involved in casualty collisions for which a driver action was specified on the collision report form. 135 were indicated as driving properly at the time of the collision.

Table 9.6

Condition of Bicyclists Involved in Casualty Collisions*

2003

Condition of Bicyclist	N	%
Normal	476	95.8
Had Been Drinking	7	1.4
Alcohol Impaired	6	1.2
Total Alcohol Involvement	**13**	**2.6**
Impaired by Drugs	1	0.2
Other	7	1.4
Total Number of Bicyclists	**497**	**100.0**

Observations

2.6% of bicyclists involved in casualty collisions had consumed alcohol before the crash.

*Based only on those cases where bicyclist condition was specified on the collision report form.

Traffic Safety Issues

Alcohol Involvement

- A total of 4.6% of drivers involved in injury crashes were judged to have consumed alcohol prior to the crash, compared to 22.3% of drivers involved in fatal collisions. As the severity of the collision increased, the involvement of alcohol dramatically increased.

- In terms of involvement per 1,000 licensed drivers, males between 18 and 24 years of age were most likely to have been drinking before the crash. There were over five times as many male drivers as female drivers who had consumed alcohol prior to the collision.

- In 2003, alcohol related casualty crashes were most likely to have occurred in August, on Saturday, and between 11:00 p.m. and 2:59 a.m.

- Figure 8 provides a graphic representation of the involvement of drinking drivers in casualty collisions over the past five years, 1999-2003.

Table 10.1

Condition of Drivers in Casualty Collisions *

2003

Condition of Driver	Drivers in Fatal Collisions N	%	Drivers in Non-Fatal Injury Collisions N	%	Total Drivers in Casualty Collisions N	%
Normal	312	73.9	24859	93.7	25171	93.4
Had Been Drinking	53	12.6	589	2.2	642	2.4
Alcohol Impaired	41	9.7	640	2.4	681	2.5
Total Alcohol Involvement	**94**	**22.3**	**1229**	**4.6**	**1323**	**4.9**
Impaired by Drugs	2	0.5	51	0.2	53	0.2
Fatigued/Asleep	11	2.6	251	0.9	262	1.0
Other	3	0.7	144	0.5	147	0.5
Total Number of Drivers	**422**	**100.0**	**26534**	**100.0**	**26956**	**100.0**

Observations

Of drivers involved in injury collisions, 4.6% had consumed alcohol before the crash, compared to 22.3% in fatal collisions. As the severity of the collision increased, the involvement of alcohol dramatically increased. Overall, 4.9% of drivers involved in casualty collisions were judged to have consumed alcohol before the crash.

*Based on those cases where driver condition was specified on the collision report form. These numbers do not include bicyclists (see Table 9.6, page 65).

Figure 8

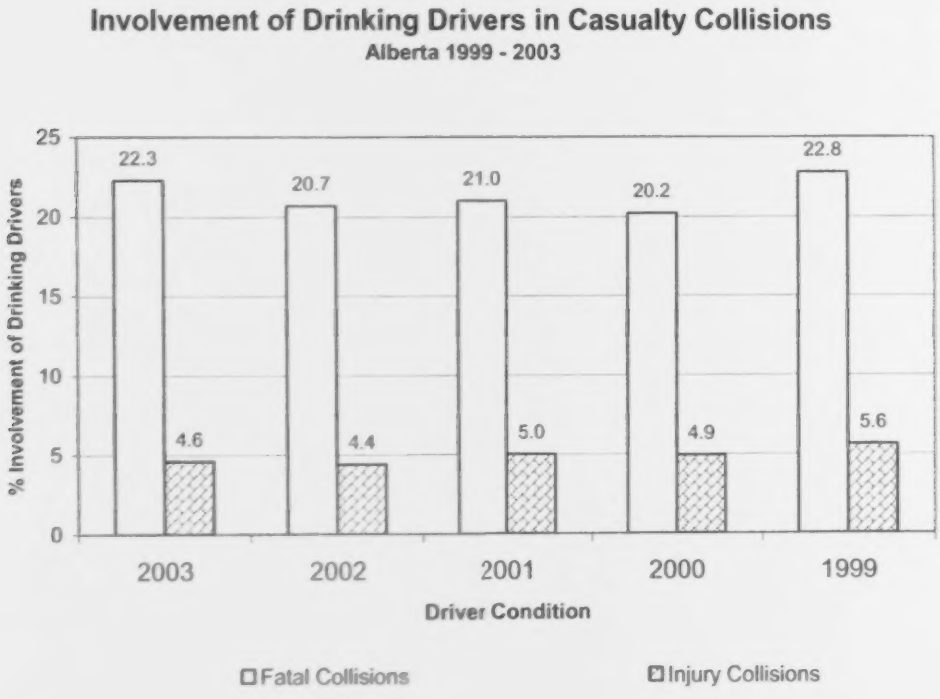

Involvement of Drinking Drivers in Casualty Collisions
Alberta 1999 - 2003
% Involvement of Drinking Drivers
25
20
15
10
5
0
22.3
4.6
20.7
4.4
21.0
5.0
20.2
4.9
22.8
5.6
2003
2002
2001
2000
1999
Driver Condition
Fatal Collisions
Injury Collisions

Figure 9

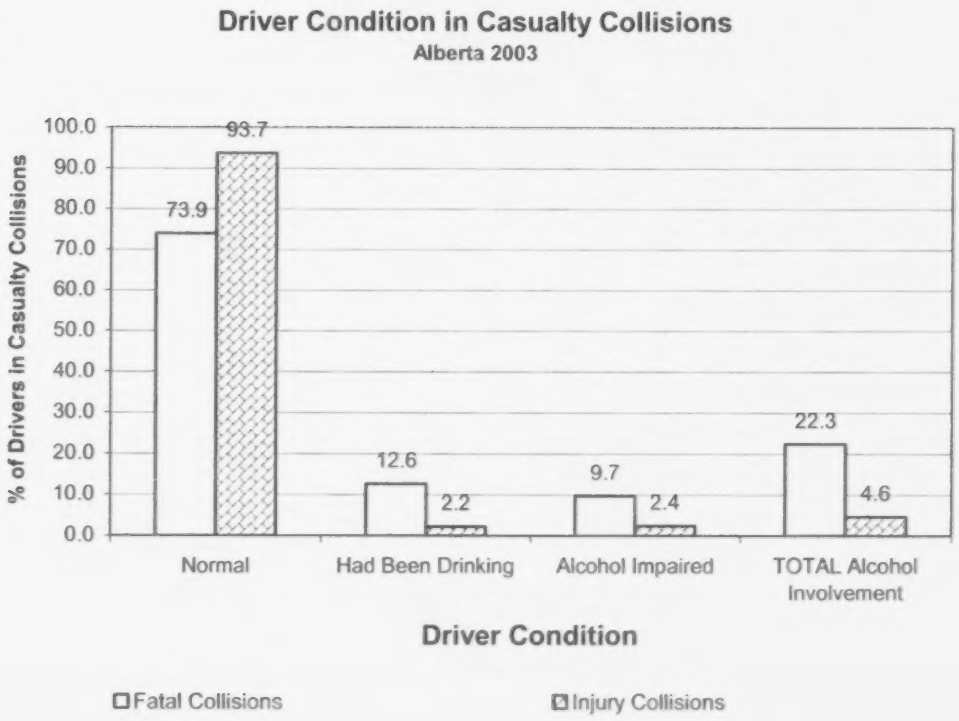

Driver Condition in Casualty Collisions
Alberta 2003
% of Drivers in Casualty Collisions
100.0
90.0
80.0
70.0
60.0
50.0
40.0
30.0
20.0
10.0
0.0
73.9
93.7
12.6
2.2
9.7
2.4
22.3
4.6
Normal
Had Been Drinking
Alcohol Impaired
TOTAL Alcohol Involvement
Driver Condition
Fatal Collisions
Injury Collisions

Table 10.2

Age and Sex of Drinking Drivers in Casualty Collisions*

2003

	Male		Rate Per 1,000** Licensed Drivers	Female		Rate Per 1,000** Licensed Drivers	Total*		Rate Per 1,000** Licensed Drivers
Age in Years	**N**	**%**		**N**	**%**		**N**	**%**	
Under 16	7	0.5	0.5	3	0.2	0.3	10	0.8	0.4
16 - 17	35	2.6	1.1	7	0.5	0.2	42	3.2	0.7
18 - 19	92	7.0	2.2	24	1.8	0.6	116	8.8	1.5
20 - 21	101	7.6	2.2	12	0.9	0.3	113	8.5	1.3
22 - 24	158	11.9	2.2	22	1.7	0.3	180	13.6	1.3
25 - 29	170	12.8	1.4	19	1.4	0.2	189	14.3	0.8
30 - 34	130	9.8	1.0	20	1.5	0.2	150	11.3	0.6
35 - 44	205	15.5	0.8	63	4.8	0.3	268	20.3	0.5
45 - 54	135	10.2	0.6	29	2.2	0.1	164	12.4	0.4
55 - 64	46	3.5	0.3	7	0.5	0.1	53	4.0	0.2
65 and over	24	1.8	0.2	4	0.3	0.0	28	2.1	0.1
Unspecified	3	0.2		1	0.1		10	0.8	
Total Drivers	**1106**	**83.6**		**211**	**15.9**		**1323**	**100.0**	

Observations

Of those collision-involved drivers who had consumed alcohol, there were over five times as many male drivers as female drivers. In terms of involvement per 1,000 licensed drivers, males 18-24 years of age were more likely to have consumed alcohol prior to a casualty collision than any other age group.

Drinking drivers include those indicated on the collision report form as having been drinking prior to the crash and those who were alcohol-impaired at the time of the crash. Whether or not the driver was actually charged is not taken into consideration by the collision report form.

* Includes only drivers whose age and/or sex was specified on the collision report form. Total includes drinking drivers whose sex was not specified on the collision report form.

** Source: Government – Registries, Operator Statistics, December 31, 2003.

Figure 10

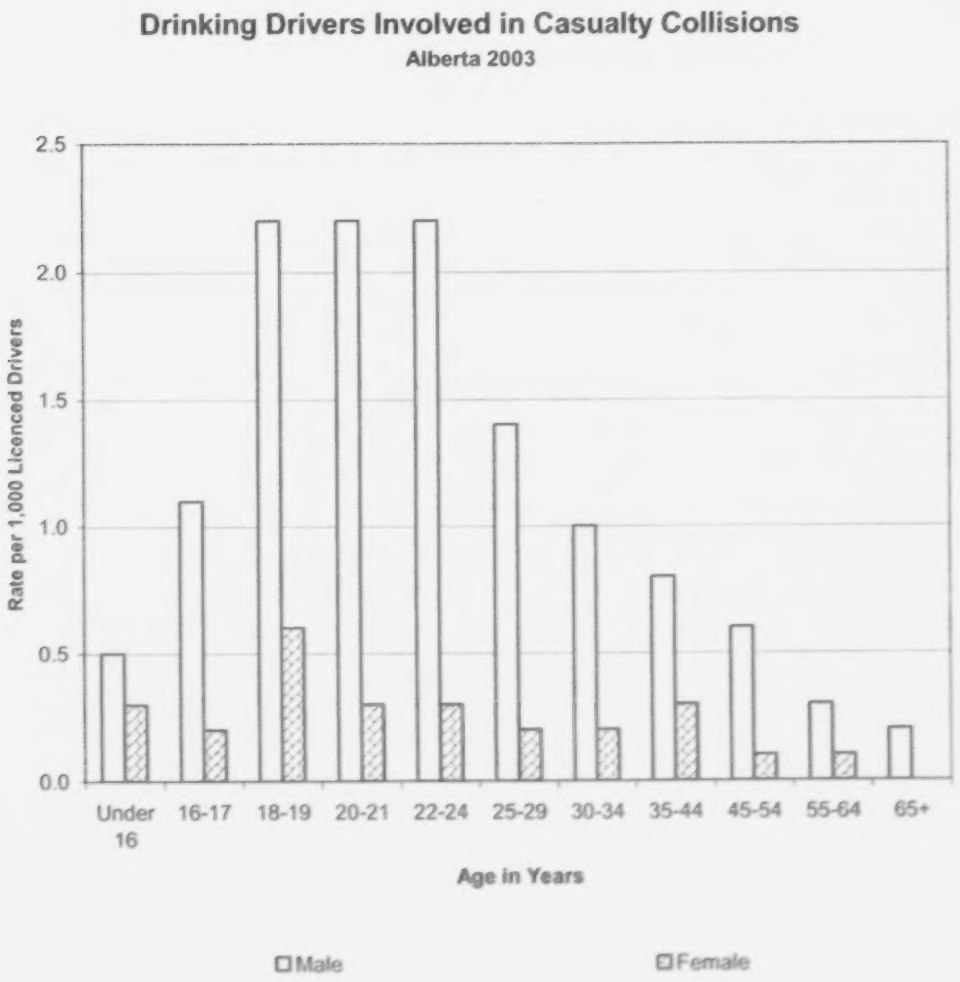

Drinking Drivers Involved in Casualty Collisions
Alberta 2003
Rate per 1,000 Licenced Drivers
2.5
2.0
1.5
1.0
0.5
0.0
Under 16
16-17
18-19
20-21
22-24
25-29
30-34
35-44
45-54
55-64
65+
Age in Years
Male
Female

Table 10.3

Alcohol-Involved Casualty Collisions:

Month of Occurrence

2003

Month	Fatal Collisions N	%	Non-Fatal Injury Collisions N	%	Total Casualty Collisions N	%
January	8	9.0	88	7.2	96	7.4
February	3	3.4	65	5.4	68	5.2
March	6	6.7	116	9.6	122	9.4
April	10	11.2	99	8.2	109	8.4
May	10	11.2	92	7.6	102	7.8
June	3	3.4	95	7.8	98	7.5
July	6	6.7	124	10.2	130	10.0
August	10	11.2	133	11.0	143	11.0
September	6	6.7	117	9.6	123	9.4
October	13	14.6	116	9.6	129	9.9
November	6	6.7	95	7.8	101	7.8
December	8	9.0	74	6.1	82	6.3
Total Number of Collisions	**89**	**100.0**	**1214**	**100.0**	**1303**	**100.0**

Observations

The month of August accounted for the largest proportion of alcohol-involved casualty collisions. The month of February accounted for the smallest proportion of alcohol-involved casualty collisions.

Table 10.4

Alcohol-Involved Casualty Collisions:

Day of Week

2003

Day of Week	Fatal Collisions N	%	Non-Fatal Injury Collisions N	%	Total Casualty Collisions N	%
Monday	5	5.6	106	8.7	111	8.5
Tuesday	6	6.7	106	8.7	112	8.6
Wednesday	13	14.6	142	11.7	155	11.9
Thursday	17	19.1	144	11.9	161	12.4
Friday	15	16.9	194	16.0	209	16.0
Saturday	17	19.1	290	23.9	307	23.6
Sunday	16	18.0	232	19.1	248	19.0
Unspecified						
Total Number of Collisions	**89**	**100.0**	**1214**	**100.0**	**1303**	**100.0**

Observations

The highest number of alcohol-involved fatal collisions occurred on Thursdays and Saturdays (19.1%) The highest number of non-fatal injury collisions occurred on Saturday (23.9%) The smallest number of alcohol-involved casualty collisions occurred on Monday.

Table 10.5

Alcohol-Involved Casualty Collisions:

Time Period

2003

Time Period	Fatal Collisions N	%	Non-Fatal Injury Collisions N	%	Total Casualty Collisions N	%
11:00 p.m. - 2:59 a.m.	21	23.6	392	32.3	413	31.7
3:00 a.m. - 6:59 a.m.	12	13.5	139	11.4	151	11.6
7:00 a.m. - 10:59 a.m.	8	9.0	45	3.7	53	4.1
11:00 a.m. - 2:59 p.m.	7	7.9	71	5.8	78	6.0
3:00 p.m. - 6:59 p.m.	7	7.9	194	16.0	201	15.4
7:00 p.m. - 10:59 p.m.	31	34.8	342	28.2	373	28.6
Unspecified	3	3.4	31	2.6	34	2.6
Total Number of Collisions	**89**	**100.0**	**1214**	**100.0**	**1303**	**100.0**

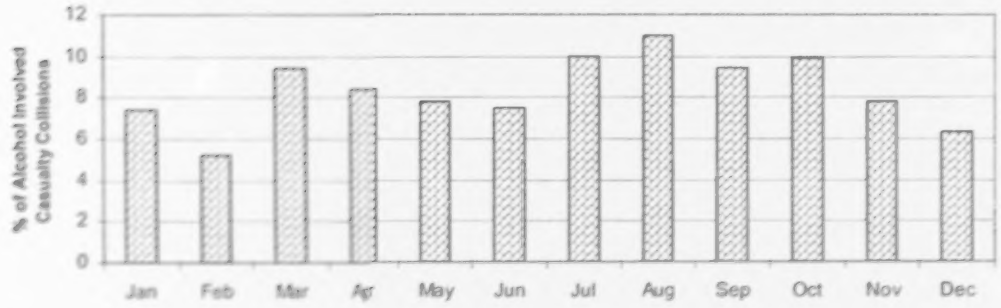
Observations

The late night/early morning time period (11:00 p.m. – 2:59 a.m.) was most likely to record alcohol-involved casualty collisions (31.7%). The morning hours (7:00 a.m. – 10:59 a.m.) were least likely to record alcohol-involved casualty crashes (4.1%).

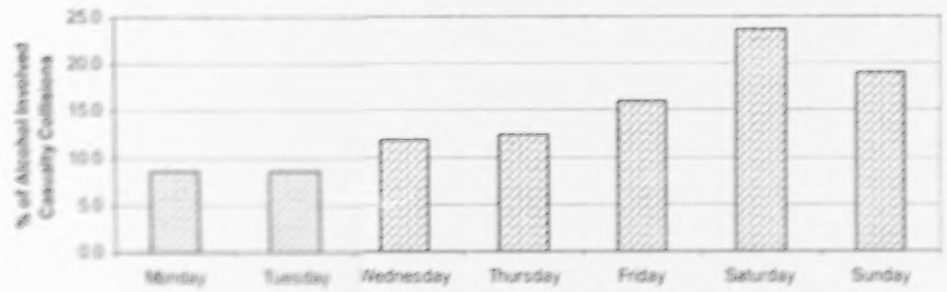
Figure 11

Alcohol-Involved Casualty Collisions
Alberta 2003

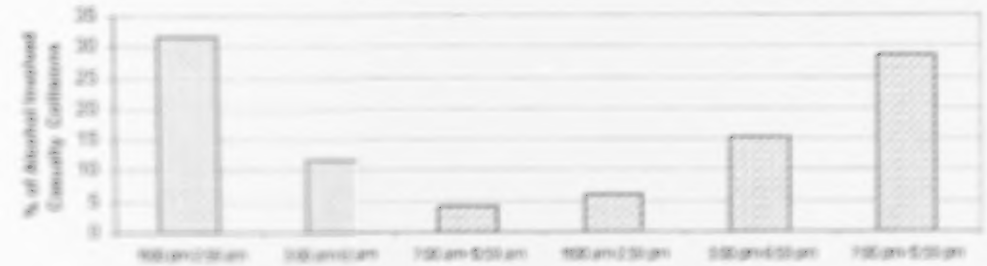
By Month of Occurrence



By Day of Week



By Time Period



Traffic Safety Issues

Restraint Use

- Collision-involved restraint users had a much lower injury rate (12.7%) than those not using restraints (39.5%).
- Non-restraint users were more than three times more likely than restraint users to be injured.

Table 10.6

Restraint Use of Vehicle Occupants and Injury Severity* (Use versus Non-Use)

2003

Injury Severity of Occupants	Percentage of Occupants Using Restraints %	Percentage of Occupants Not Using Restraints %
Fatal Injury	0.1	2.6
Major Injury	1.0	12.0
Minor Injury	11.6	24.9
Total Occupants Sustaining Injuries	**12.7**	**39.5**
No Apparent Injury	87.3	60.5
Total Occupants	**100.0**	**100.0**

Observations

Collision involved restraint users had a much lower injury rate (12.7%) than those not using restraints (39.5%). Non-restraint users were more than three times as likely as restraint users to be injured.

Injury Severity

Fatal – A fatal injury is the death of a person that occurs as a result of a motor vehicle collision within 30 days of the collision.

Major – Persons with injuries or complaint of pain that went to the hospital and were subsequently admitted even if for observation only.

Minor – Persons with injuries or complaint of pain that went to the hospital, were treated in emergency (or refused treatment) and SENT HOME without ever being admitted to the hospital. (Also includes persons who indicated they intend to seek medical attention.)

*Based on those cases where occupant restraint use and injury severity were specified on the collision report form.